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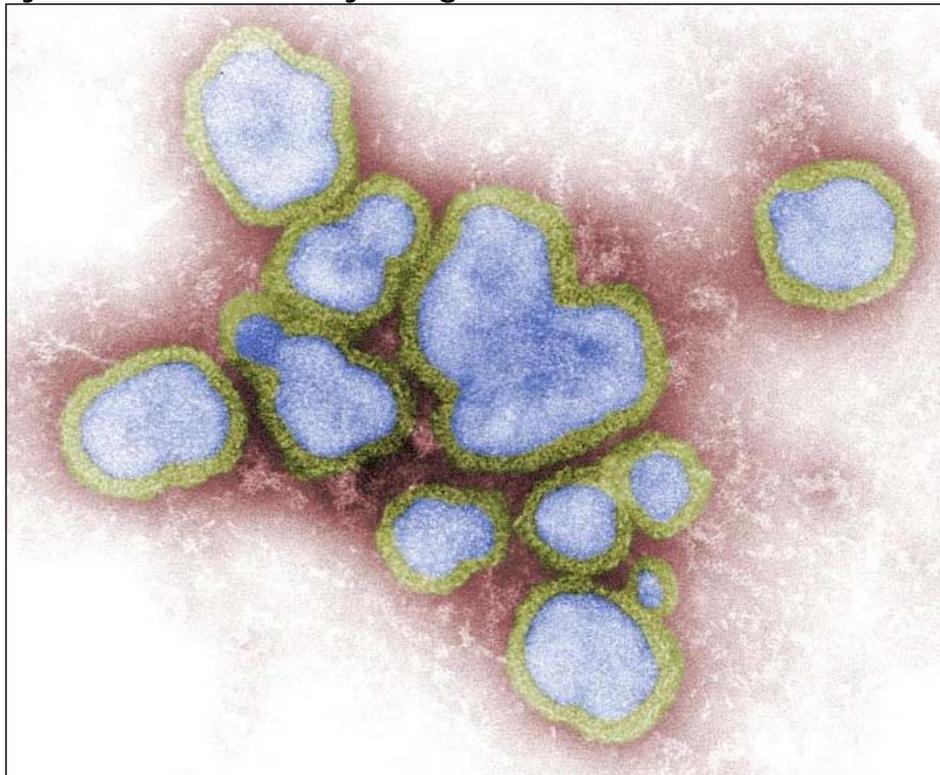
Objetivos/ Objectives

Identificar y atender las necesidades de información, adquisición, organización, almacenamiento, generación, uso y difusión de la información en salud pública veterinaria y proveer recursos bibliográficos técnicos-científicos al equipo de profesionales de la unidad y a los usuarios externos.

Identify and take care of the needs of information, acquisition, organization, storage, generation, use and diffusion of the information in veterinary public health and provide technical scientific bibliographical resources to the professional staff of the unit and to the users external.

Temas de interés general / Subjects of general interest

Discovery of Natural Antibody Brings a Universal Flu Vaccine a Step Closer



This digitally-colored negative-stained transmission electron micograph (TEM) depicted a number of influenza A virions. (Credit: CDC/F. A. Murphy)

Annually changing flu vaccines with their hit-and-miss effectiveness may soon give way to a single, near-universal flu vaccine, according to a new report from scientists at The Scripps Research Institute

and the Dutch biopharmaceutical company Crucell. They describe an antibody that, in animal tests, can prevent or cure infections with a broad variety of influenza viruses, including seasonal and potentially pandemic strains. *ScienceDaily* (July 8, 2011)

Journal Reference:

Ekiert DC, Friesen RH, Bhabha G, Kwaks T, Jongeneelen M, Yu W, Ophorst C, Cox F, Korse HJ, Brandenburg B, Vogels R, Brakenhoff JP, Kompier R, Koldijk MH, Cornelissen LA, Poon LL, Peiris M, Koudstaal W, Wilson IA, Goudsmit J. **A Highly Conserved Neutralizing Epitope on Group 2 Influenza A Viruses.** *Science.* 2011 Jul 7, 2011
<http://www.sciencemag.org/content/early/2011/07/06/science.1204839>

Informaciones disponibles en formato electrónico / Information available in electronic format

Brucellosis / Brucellosis



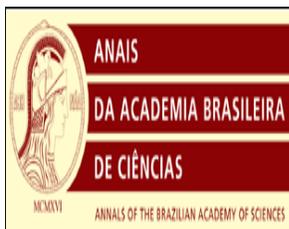
Update on the role of innate immune receptors during *Brucella abortus* infection

Oliveira SC, de Almeida LA, Carvalho NB, Oliveira FS, Lacerda TL
Vet Immunol Immunopathol. 2011 Jun

The innate immune system constitutes an efficient defense mechanism against invading microbial pathogens. Recent studies have revealed the intracellular signaling cascades involved in the TLR-initiated immune response to *Brucella* spp. infection. However, there is a piece of the puzzle missing that is the role of non-TLR receptors in innate immunity. The involvement of TLR receptors in brucellosis has been investigated by different research groups. It was demonstrated that TLR2 clearly does not play any role in controlling *Brucella abortus* infection *in vivo*, whereas TLR9 has been shown to be required for clearance of this bacterium in infected mice. The participation of adaptor molecules, such as MyD88 and TRIF has also been discussed. Recently, we and others have reported the critical role of MyD88- and not TRIF-mediated signaling in dendritic cell maturation and *in vivo* resistance during *B. abortus* infection. However, the relationship between specific *Brucella* molecules and non-TLR receptors and signal transduction pathways needs to be better understood. It is now clear that the interaction between TLRs and recently identified cytosolic innate immune sensors is crucial for mounting effective immune responses. Finally, this review discusses the mechanisms used by *Brucella* to escape detection by the host innate immune system.

Text in English (article in press)

Enfermedad de Chagas / Chagas Disease



Chagas disease in prehistory

Ferreira LF, Jansen AM, Araújo A
An Acad Bras Cienc. 2011 Jul

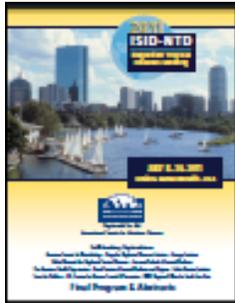
The classical hypothesis proposes that Chagas disease has been originated in the Andean region among prehistoric people when they started domesticating animals, changing to sedentary habits, and adopting

agriculture. These changes in their way of life happened nearly 6,000 years ago. However, paleoparasitological data based on molecular tools showed that *Trypanosoma cruzi* infection and Chagas disease were commonly found both in South and North American prehistoric populations long before that time, suggesting that Chagas disease may be as old as the human presence in the American continent. The study of the origin and dispersion of *Trypanosoma cruzi* infection among prehistoric human populations may help in the comprehension of the clinical and epidemiological questions on Chagas disease that still remain unanswered.

Text in English (article in press)

<http://www.scielo.br/pdf/aabc/2011nahead/AOP1111.pdf>

Enfermedades Desatendidas /Neglected Diseases



First International Society for Infectious Diseases-Neglected Tropical Diseases Meeting (ISID-NTD)

July 8–10, 2011- Boston, Massachusetts, USA

There is a growing international recognition that NTDs profoundly impact the lives of more than one billion people around the world.

As a result, we are now seeing healthy increases in financial, pharmaceutical and personal commitments to fight these diseases. Dedicated individuals, organizations and governments are actively applying these new resources against the massive burden of NTDs. As part of the increasing effort, the ISID-NTD meeting aims to provide a unique and valuable forum for those fighting NTDs to share experiences, discuss issues, plan together and raise awareness.

Discussions leading up to this meeting spotlighted areas where dialogue and debate may be useful. For instance, most current efforts against NTDs focus on delivering available drug treatments where most needed. However, many argue that ending NTDs will ultimately require fundamental infrastructure and health system improvements on a global scale. How can the community working against NTDs effect societal change on such a huge scale while at the same time coordinating drug administration programs and implementing a research and development agenda for the future? This is a tough question! Let this meeting be a time for open dialog about this and other important questions. Let this meeting also be an opportunity to project a positive message encouraging continued support from policymakers and donors to end NTDs.

Text in English

http://ww2.isid.org/Downloads/NTD2011/NTD_FinalProgram.pdf

Enfermedades Parasitarias – Diagnostico / Parasitic Diseases – Diagnosis



Molecular diagnosis of infections and resistance in veterinary and human parasites

Hunt PW

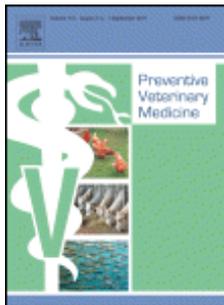
Vet Parasitol. 2011 Aug; 180 (1-2): 12-46

Since 1977, >2000 research papers described attempts to detect, identify and/or quantify parasites, or

disease organisms carried by ecto-parasites, using DNA-based tests and 148 reviews of the topic were published. Despite this, only a few DNA-based tests for parasitic diseases are routinely available, and most of these are optional tests used occasionally in disease diagnosis. Malaria, trypanosomiasis, toxoplasmosis, leishmaniasis and cryptosporidiosis diagnosis may be assisted by DNA-based testing in some countries, but there are very few cases where the detection of veterinary parasites is assisted by DNA-based tests. The diagnoses of some bacterial (e.g. Lyme disease) and viral diseases (e.g. tick borne encephalitis) which are transmitted by ecto-parasites more commonly use DNA-based tests, and research developing tests for these species makes up almost 20% of the literature. Other important uses of DNA-based tests are for epidemiological and risk assessment, quality control for food and water, forensic diagnosis and in parasite biology research. Some DNA-based tests for water-borne parasites, including *Cryptosporidium* and *Giardia*, are used in routine checks of water treatment, but forensic and food-testing applications have not been adopted in routine practice. Biological research, including epidemiological research, makes the widest use of DNA-based diagnostics, delivering enhanced understanding of parasites and guidelines for managing parasitic diseases. Despite the limited uptake of DNA-based tests to date, there is little doubt that they offer great potential to not only detect, identify and quantify parasites, but also to provide further information important for the implementation of parasite control strategies. For example, variant sequences within species of parasites and other organisms can be differentiated by tests in a manner similar to genetic testing in medicine or livestock breeding. If an association between DNA sequence and phenotype has been demonstrated, then qualities such as drug resistance, strain divergence, virulence, and origin of isolates could be inferred by DNA-based tests. No such tests are in clinical or commercial use in parasitology and few tests are available for other organisms. Why have DNA-based tests not had a bigger impact in veterinary and human medicine? To explore this question, technological, biological, economic and sociological factors must be considered. Additionally, a realistic expectation of research progress is needed. DNA-based tests could enhance parasite management in many ways, but patience, persistence and dedication will be needed to achieve this goal.

Text in English

Epidemiología Veterinaria / Veterinary Epidemiology



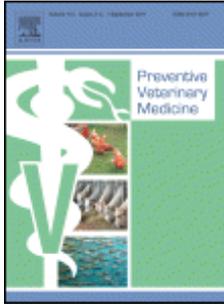
The economic and poverty impacts of animal diseases in developing countries: New roles, new demands for economics and epidemiology

Rich KM, Perry BD

Prev Vet Med. 2011 Sep; 101 (3-4): 133-47

Animal disease outbreaks pose significant threats to livestock sectors throughout the world, both from the standpoint of the economic impacts of the disease itself and the measures taken to mitigate the risk of disease introduction. These impacts are multidimensional and not always well understood, complicating effective policy response. In the developing world, livestock diseases have broader, more nuanced effects on markets, poverty, and livelihoods, given the diversity of uses of livestock and complexity of livestock value chains. In both settings, disease control strategies, particularly those informed by ex ante modeling platforms, often fail to recognize the constraints inherent among farmers, veterinary services, and other value chain actors. In short, context matters. Correspondingly, an important gap in the animal health economics literature is the explicit incorporation of behavior and incentives in impact analyses that highlight the interactions of disease with its socio-economic and institutional setting. In this paper, we examine new approaches and frameworks for the analysis of economic and poverty impacts of animal diseases. We propose greater utilization of "bottom-up" analyses, highlighting the strengths and weaknesses of value chain and information economics approaches in impact analyses and stressing the importance of improved integration between the epidemiology of disease and its relationships with economic behavior.

Text in English



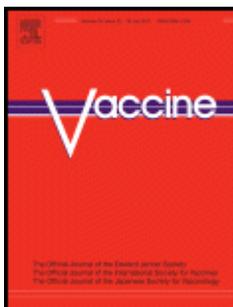
Veterinary syndromic surveillance: Current initiatives and potential for development

Dórea FC, Sanchez J, Revie CW
Prev Vet Med. 2011 Aug; 101 (1-2): 1-17

This paper reviews recent progress in the development of syndromic surveillance systems for veterinary medicine. Peer-reviewed and grey literature were searched in order to identify surveillance systems that explicitly address outbreak detection based on systematic monitoring of animal population data, in any phase of implementation. The review found that developments in veterinary syndromic surveillance are focused not only on animal health, but also on the use of animals as sentinels for public health, representing a further step towards One Medicine. The main sources of information are clinical data from practitioners and laboratory data, but a number of other sources are being explored. Due to limitations inherent in the way data on animal health is collected, the development of veterinary syndromic surveillance initially focused on animal health data collection strategies, analyzing historical data for their potential to support systematic monitoring, or solving problems of data classification and integration. Systems based on passive notification or data transfers are now dealing with sustainability issues. Given the ongoing barriers in availability of data, diagnostic laboratories appear to provide the most readily available data sources for syndromic surveillance in animal health. As the bottlenecks around data source availability are overcome, the next challenge is consolidating data standards for data classification, promoting the integration of different animal health surveillance systems, and also the integration to public health surveillance. Moreover, the outputs of systems for systematic monitoring of animal health data must be directly connected to real-time decision support systems which are increasingly being used for disease management and control.

Text in English

Fiebre Aftosa / Foot and Mouth Disease



Foot and mouth disease (FMD) virus: Quantification of whole virus particles during the vaccine manufacturing process by size exclusion chromatography

Spitteler MA, Fernández I, Schabes E, Krimer A, Régulier EG, Guinzburg M, Smitsaart E, Levy MS
Vaccine. 2011 Jun

Foot and mouth disease (FMD) is a highly infectious viral disease that affects cattle, sheep, goats and swine causing severe economic losses worldwide. The efficacy of inactivated vaccines is critically dependent on the integrity of foot and mouth disease virus (FMDV) particles. The recommended method to quantify the active ingredient of vaccines is the 140S quantitative sucrose density gradient analysis. This method has been an immensely valuable tool over the past three decades but it is highly operator dependent and difficult to automate. We developed a method to quantify FMDV particles during the vaccine manufacturing process that is based on separation of components by size-exclusion chromatography and measurement of virus by absorption at 254nm. The method is linear in the 5-70µg/mL range, it is applicable to different FMDV strains, and has a good correlation with the 140S test. The proposed method uses standard chromatographic media and it is amenable to automation. The

method has potential as a process analytical technology and for control of final product by manufacturers, international vaccine banks and regulatory agencies.

Text in English (article in press)



Research in advance for FMD Novel Vaccines

Zhang L, Zhang J, Chen HT, Zhou JH, Ma LN, Ding YZ, Liu YS
Virology J. 2011 Jun; 8: 268

Foot-and-Mouth Disease (FMD), as a major global animal disease, affects millions of animals worldwide and remains the main sanitary barrier to the international and national trade of animals and animal products. Inactivated vaccination is the most effective measure for prevention of FMD at present, but fail to induce long-term protection and content new requires for production of FMD vaccines. As a number of Researchers hope to obtain satisfactory novel vaccines by new bio-technology, novel vaccines have been studied for more than thirty years. Here reviews the latest research progress of new vaccines, summarizes some importance and raises several suggestions for the future of FMD vaccine.

Text in English

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3118361/pdf/1743-422X-8-268.pdf>

Influenza



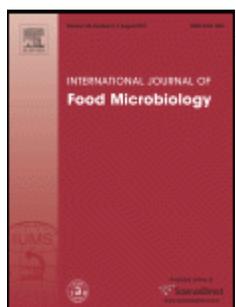
Influenza A viruses: new research developments

Medina RA, García-Sastre A
Nat Rev Microbiol. 2011 Jul; 9 (8): 590-603

Influenza A viruses are zoonotic pathogens that continuously circulate and change in several animal hosts, including birds, pigs, horses and humans. The emergence of novel virus strains that are capable of causing human epidemics or pandemics is a serious possibility. Here, we discuss the value of surveillance and characterization of naturally occurring influenza viruses, and review the impact that new developments in the laboratory have had on our understanding of the host tropism and virulence of viruses. We also revise the lessons that have been learnt from the pandemic viruses of the past 100 years.

Text in English

Inocuidad de los Alimentos / Food Safety



Survival of Salmonella Newport in oysters

Morrison CM, Armstrong AE, Evans S, Mild RM, Langdon CJ, Joens LA
Int J Food Microbiol. 2011 Aug; 148 (2): 93-8

Salmonella enterica is the leading cause of laboratory-confirmed foodborne illness in the United States and raw shellfish consumption is a commonly implicated source of gastrointestinal pathogens. A 2005 epidemiological study done in our laboratory by Brands et al., showed that oysters in the United States are contaminated with Salmonella, and in particular, a specific strain of the Newport serovar. This work sought to further investigate the host-microbe interactions between Salmonella Newport and oysters. A procedure was developed to reliably and repeatedly expose oysters to enteric bacteria and quantify the subsequent levels of bacterial survival. The results show that 10days after an exposure to Salmonella Newport, an average concentration of 3.7×10^3 CFU/g remains within the oyster meat, and even after 60days there still can be more than 10^2 CFU/g remaining. However, the strain of Newport that predominated in the market **survey** done by Brands et al. does not survive within oysters or the estuarine environment better than any other strains of Salmonella we tested. Using this same methodology, we compared Salmonella Newport's ability to survive within oysters to a non-pathogenic strain of E. coli and found that after 10days the concentration of Salmonella was 200-times greater than that of E. coli. We also compared those same strains of Salmonella and E. coli in a depuration process to determine if a constant 120L/h flux of clean seawater could significantly reduce the concentration of bacteria within oysters and found that after 3days the oysters retained over 10^4 CFU/g of Salmonella while the oysters exposed to the non-pathogenic strain of E. coli contained 100-times less bacteria. Overall, the results of this study demonstrate that any of the clinically relevant serovars of Salmonella can survive within oysters for significant periods of time after just one exposure event. Based on the drastic differences in survivability between Salmonella and a non-pathogenic relative, the results of this study also suggest that unidentified virulence factors may play a role in Salmonella's interactions with oysters.

Text in English

Leishmaniasis



Estudo epidemiológico prospectivo em cães assintomáticos infectados por *Leishmania (Leishmania) infantum* e identificação de biomarcadores de infecção

Coura-Vital W

Tese (doutorado) – Universidade Federal de Minas Gerais, Dep. Parasitologia
2011

Over the last three decades, visceral leishmaniasis has spread to a number of metropolitan areas in Brazil. Various factors contribute to the urbanization of the diseases including the difficulties of implementing control measures relating to the domestic (delayed diagnosis and euthanasia, continuous replacement of dogs and lack of sensitivity of the methods of diagnosis used) and to the insect vector. Epidemiological studies using molecular techniques have previously indicated that the prevalence of canine visceral leishmaniasis (CVL) is significantly higher than that detected by serology. The aim of the present study was to determine the prevalence, incidence and the risk factors associated with *Leishmania infantum* infection among seronegative and polymerase chain reaction (PCR) positive dogs in the northwest sanitary district of Belo Horizonte, Minas Gerais, Brazil.

Text in Portuguese

http://www.bibliotecadigital.ufmg.br/dspace/bitstream/1843/BUOS-8GLLRO/1/coura_vital_2011_tese.pdf

Leptospirosis



Interactions between environment, wild animals and human leptospirosis

Ullmann LS, Langoni H

J Venom Anim Toxins incl Trop Dis. 2011 Jul; 17 (2): 119-29

Leptospirosis, a worldwide distributed zoonosis caused by bacteria of the genus *Leptospira* (antigenically classified into serovars), may be direct or indirectly transmitted through infected urine or environment. Several domestic and wild animals are leptospirosis reservoirs. The disease presents occupational character since it is widely reported in professionals that work in humid environments - such as sewage workers and fishermen - and in places where rodents or susceptible animals are found, like slaughterhouses and veterinary clinics. In developing countries, outbreaks are related to lack of sanitation, overcrowding in inadequate housing and climatic conditions. In developed countries, sporadic cases occur in aquatic recreational activities including swimming and triathlon. The diagnosis of leptospirosis is complex due to the variety of symptoms, disease severity and the lack of techniques that are able to early detect the infection. Thus, leptospirosis causes numerous public health problems and educational activities are very important to its control.

Text in English

<http://www.scielo.br/pdf/jvatitd/v17n2/02.pdf>

Rotavirus



Decline in diarrhea mortality and admissions after routine childhood rotavirus immunization in Brazil: a time-series analysis

Carmo GMI, Yen C, Cortes J, Siqueira AA, Oliveira WK, Cortez-Escalante JJ, Lopman B, Flannery B, Oliveira LH, Carmo EH, Patel M

PLoS Med. 2011 Apr; 8 (4): e1001024

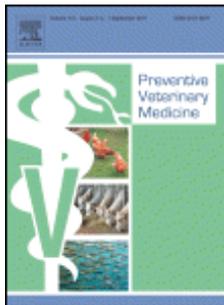
BACKGROUND: In 2006, Brazil began routine immunization of infants <15 wk of age with a single-strain rotavirus vaccine. We evaluated whether the rotavirus vaccination program was associated with declines in childhood diarrhea deaths and hospital admissions by monitoring disease trends before and after vaccine introduction in all five regions of Brazil with varying disease burden and distinct socioeconomic and health indicators. **METHODS AND FINDINGS:** National data were analyzed with an interrupted time-series analysis that used diarrhea-related mortality or hospitalization rates as the main outcomes. Monthly mortality and admission rates estimated for the years after rotavirus vaccination (2007-2009) were compared with expected rates calculated from pre-vaccine years (2002-2005), adjusting for secular and seasonal trends. During the three years following rotavirus vaccination in Brazil, rates for diarrhea-related mortality and admissions among children <5 y of age were 22% (95% confidence interval 6%-44%) and 17% (95% confidence interval 5%-27%) lower than expected, respectively. A cumulative total of ~1,500 fewer diarrhea deaths and 130,000 fewer admissions were observed among children <5 y during the three years after rotavirus vaccination. The largest reductions in deaths (22%-28%) and admissions (21%-25%) were among children younger than 2 y, who had the highest rates of vaccination. In contrast, lower reductions in deaths (4%) and admissions (7%) were noted among children two years of age and older, who were not age-eligible for vaccination during the

study period. **CONCLUSIONS:** After the introduction of rotavirus vaccination for infants, significant declines for three full years were observed in under-5-y diarrhea-related mortality and hospital admissions for diarrhea in Brazil. The largest reductions in diarrhea-related mortality and hospital admissions for diarrhea were among children younger than 2 y, who were eligible for vaccination as infants, which suggests that the reduced diarrhea burden in this age group was associated with introduction of the rotavirus vaccine. These real-world data are consistent with evidence obtained from clinical trials and strengthen the evidence base for the introduction of rotavirus vaccination as an effective measure for controlling severe and fatal childhood diarrhea.

Text in English

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3079643/pdf/pmed.1001024.pdf>

Tuberculosis Bovina / Bovine Tuberculosis



Post-mortem examination and laboratory-based analysis for the diagnosis of bovine tuberculosis among dairy cattle in Ecuador

Proaño-Pérez F, Benitez-Ortiz W, Desmecht D, Coral M, Ortiz J, Ron L, Portaels F, Rigouts L, Linden A
Prev Vet Med. 2011 Aug; 101 (1-2): 65-72

Veterinary inspection in slaughterhouses allows for the detection of macroscopic lesions reminiscent of bovine tuberculosis, but the presence of *Mycobacterium bovis* must be confirmed by laboratory methods. This study aimed at comparing the performances of the standard diagnostic tools used to identify *M. bovis* in tissue specimens sampled from suspicious animals. During a two years period, 1390 cattle were inspected at the Machachi abattoir in the Mejia canton - Ecuador. A total of 33 animals with granulomatous lesions were detected, representing 2.33% (16/687) and 2.42% (17/703) animals examined in 2007 and 2008, respectively. Ninety-four tissue specimens were sampled and screened for the presence of mycobacteria. Acid-fast bacilli were identified in one third of the suspicious cattle (11/33) and suggestive microscopic lesions in 27.3% (9/33) of the samples examined by direct microscopy and histopathology, respectively. Culturing on Stonebrink medium and 16S-rRNA-based polymerase chain reaction (PCR) yielded 36.4% (12/33) and 27.3% (9/33) of positives, respectively. Compared to culture, other diagnostic procedures displayed a lower sensitivity, with 56.5% for PCR, and 43.5% for direct microscopy and histopathology; however, the specificity was higher (94.4% for PCR and microscopy, and 97.2% for histopathology). We conclude that reliable post-mortem laboratory testing either requires the combination of a set of available diagnostic tools or necessitates the development of improved new-generation tools with better sensitivity and specificity characteristics.

Text in English

Zoonosis / Zoonoses



European Union summary report on antimicrobial resistance in zoonotic and indicator bacteria from animals and food in the European Union in 2009

European Food Safety Authority, European Centre for Disease Prevention and Control
EFSA Journal 2011; 9 (7): 2154. [321 pp]

The European Food Safety Authority and the European Centre for Disease Prevention and Control have

analysed the information on antimicrobial resistance among zoonotic and indicator bacteria in 2009 submitted by 25 European Union Member States. This information covers antimicrobial resistance in *Salmonella* and *Campylobacter* isolates from humans, food and animals, and in indicator *Escherichia coli* and enterococci isolates from animals and food. Data on resistance in isolates from humans were mainly interpreted using clinical breakpoints, while for isolates from animals and food resistance was interpreted using the more sensitive epidemiological cut-off values. Resistance to antimicrobials was commonly found in isolates from humans, animals and food, although disparities in the occurrences of resistance were frequently observed between Member States. High resistance levels were recorded to ampicillin, tetracyclines and sulphonamides in *Salmonella* isolates from human cases, while resistance to third-generation cephalosporins and fluoroquinolones, both critically important antimicrobial groups for human medicine, remained low. In *Salmonella* and indicator *E. coli* isolates from fowl, pigs, cattle and meat thereof, resistance to tetracyclines, ampicillin and sulphonamides was also commonly found, while resistance to third-generation cephalosporins was low. Moderate to high levels of ciprofloxacin (a fluoroquinolone) resistance was observed in *Salmonella* and indicator *E. coli* isolates from fowl, broiler meat and pigs. In *Campylobacter* isolates from human cases, resistance to ampicillin, ciprofloxacin, nalidixic acid and tetracyclines was high, while resistance to erythromycin, a critically important antimicrobial, was recorded at a low level. High resistance to ciprofloxacin, nalidixic acid and tetracyclines was also observed in *Campylobacter* isolates from fowl, broiler meat, pigs and cattle, whereas erythromycin resistance was at lower levels. Among the indicator enterococci isolates from animals and food, resistance to tetracyclines and erythromycin was commonly detected.

Text in English

<http://www.efsa.europa.eu/en/efsajournal/doc/2154.pdf>

Eventos / Events

Global Conference on Rabies Control: Towards Sustainable Prevention at the Source

7-9 September 2011

Seoul (Republic of Korea),

http://www.oie.int/fileadmin/Home/eng/Conferences_Events/docs/pdf/rage_Anonce.pdf

Noticias / News

FWC, partners monitoring birds for avian influenza to protect public health

<http://myfwc.com/news/news-releases/2011/july/20/avian-flu/>



Salud Pública Veterinaria

[Centro Panamericano de Fiebre Aftosa](#)



Veterinary Public Health

[Pan American Foot and Mouth Disease Center](#)

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